



## Early Journal Content on JSTOR, Free to Anyone in the World

This article is one of nearly 500,000 scholarly works digitized and made freely available to everyone in the world by JSTOR.

Known as the Early Journal Content, this set of works include research articles, news, letters, and other writings published in more than 200 of the oldest leading academic journals. The works date from the mid-seventeenth to the early twentieth centuries.

We encourage people to read and share the Early Journal Content openly and to tell others that this resource exists. People may post this content online or redistribute in any way for non-commercial purposes.

Read more about Early Journal Content at <http://about.jstor.org/participate-jstor/individuals/early-journal-content>.

JSTOR is a digital library of academic journals, books, and primary source objects. JSTOR helps people discover, use, and build upon a wide range of content through a powerful research and teaching platform, and preserves this content for future generations. JSTOR is part of ITHAKA, a not-for-profit organization that also includes Ithaka S+R and Portico. For more information about JSTOR, please contact [support@jstor.org](mailto:support@jstor.org).

members of the Moss Chapter by paying 25 cents annually, but such members shall not be entitled to a separate copy of the *BRYOLOGIST*. All revenue for dues, etc., will go directly into the treasury of the Chapter, to be expended for the Chapter by the officers elected for that purpose.

The charter membership roll will remain open until Dec. 10th, 1898, and it is expected that there will be a large number of charter members, since the present month is the beginning of a season when the mosses are at their best.

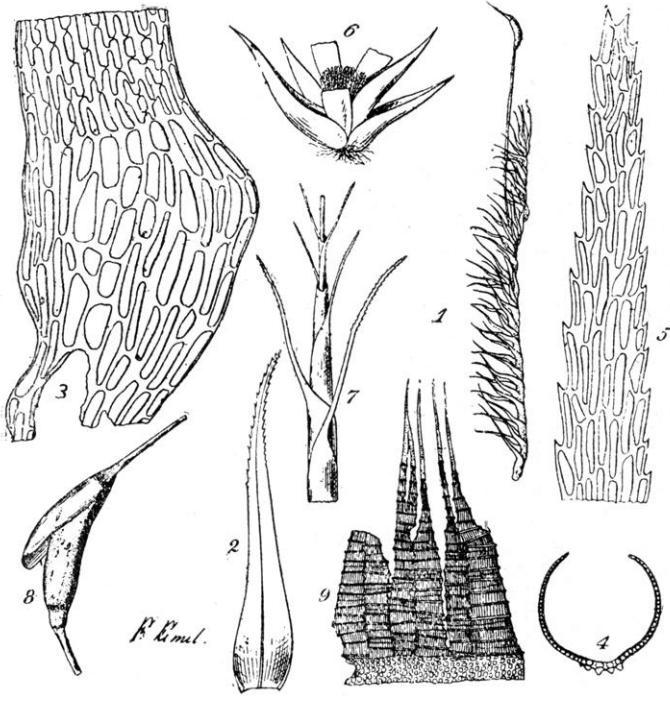
Only members of the Chapter will be entitled to the mosses offered in the *BRYOLOGIST* at the rates mentioned therein.

### THE DICRANUMS.

THE Dicranums include some of our most common and easily recognized mosses, and they will be found in perfect fruit at the time this issue of the *BRYOLOGIST* reaches our readers. When one knows a single species of this genus, he will have little difficulty in recognizing the others, although it is not so easy to say just what characters give them their distinctive habit. The Dicranums usually grow in dense tufts or cushions which soak up water like a sponge and retain it for a long time. The leaves are usually bent to one side (secund), as if the wind had blown them strongly in one direction (Fig. 1). They are also usually curved like a scythe or a sickle (falcate).

The Dicranums are acrocarpous, but the stem grows on after the capsule has begun to develop, thus leaving the seta apparently starting from the side of the stem (Fig. 1). This often happens with a acrocarpous mosses, but their erect habit and stems little divided or branched enable the acrocarpous mosses to be distinguished from the pleurocarpous even when sterile. The capsules are on long setæ and are either curved (arcuate, Fig. 8) or drooping (cernous), or straight. The operculum is long-beaked (rostrate), and the calyptra smooth and split down one side (cucullate, Fig. 8). The base of the seta is surrounded by a cluster of specialized leaves (the perichaetial leaves, Fig. 7). There are perichaetial leaves in the hair-caps, but they are much less strongly differentiated. The peristome is single—that is, it consists of one row of 16 jointed teeth, which are split half way down into two or three prongs (Fig. 9). It is strongly colored and makes a most beautiful microscopic object. Most of the species have at least the lower part of the stem covered with a

thick felt of radicles. The leaves are usually lanceolate to lance-subulate, with a concave base and a very strong costa extending nearly or quite to the apex of the leaf, or even beyond. Fig. 4 shows the leaf in cross section and also shows the narrow lamellæ, which are found on the *lower side* of the costa instead of the upper, as in the hair-caps. These lamellæ are often very strongly toothed. A section of the leaf is not necessary in order to see the lamellæ



DICRANUM SCOPARIUM.

Fig. 1, Plant natural size, the fruit terminal, becoming lateral by the growth of the stem; 2, single leaf enlarged; 3, part of base of leaf, showing the enlarged cells at basal angles, and the porose cells above; 4, cross-section of leaf showing the ridges on the back of the vein; 5, apex of leaf enlarged; 6, antheridial bud; 7, perichaetial leaves, sheathing the base of the seta; 8, capsule with the calyptra and lid on; 9, peristome showing two teeth divided more or less irregularly to the middle. [From Mrs. Britton's article in the February, 1895, *Observer*. By permission].

clearly. If several leaves be mounted in water, some will nearly always be turned so as to show them in profile. This is rendered easier by the fact that in many species the edges of the leaves are rolled in (involute) in the upper part so that the leaves are tubulose. The upper leaf cells are elongated-rectangular, oblong-linear, quadrate or elliptical, according to the species; toward the base they are elongated-rectangular. Those at the basal angles are much enlarged and inflated, and are often of a different color from the others (Fig. 3, lower portion). This last character distinguishes the *Dicranums* from the allied genera and species except *Campylopus*, in which the seta is curved and the capsule pendent. Many of the species have the cells communicating by pores, as shown in the upper part of Fig. 3. Such cells are called porose or pitted. The protoplasm of the adjoining cells communicates through these pores. These pores are very helpful in determining the species.

While there are 20 species of *Dicranum* found in the United States north of Virginia and east of the Mississippi, there are only five that are likely to be found by the great majority of our readers. One of the most common and conspicuous is the broom moss (*D. scoparium*), so called because its leaves all point one way in a manner that reminds one of a hair-broom or counter-brush.\* This is often used by florists and other merchants to form banks of dark green in their windows. It can be found almost anywhere in the woods, on the ground, roots of trees, and rocks. It is much the coarsest-appearing of the common species that have curved capsules. A reference to the figures will give all further details necessary for the identification of this species.

The wavy *Dicranum* (*D. undulatum*) also grows on the ground and rocks, but is the largest of the five species, and is at once distinguished in the field by its beautiful silky, strongly undulate leaves and clustered capsules. That is, it has several capsules with setæ inclosed in one cluster of perichætal leaves (perichætium). The leaf cells are elongated and porose, like those of the broom moss.

The fuscous *Dicranum* (*D. fuscescens*) grows on rotten wood, and is the only other common *Dicranum* with a curved capsule. It is easily distinguished from the preceding species by its smaller size, more delicate appearance, and leaves not undulate but

---

\*Fide Mrs. E. G. Britton in the New York Teachers' Monograph, Vol. 1, No. 2.

crisped after the manner of curled hair. Its capsules are single, and much shorter and more strongly arcuate than in the above species. Under the microscope it is at once distinguished by the short upper leaf cells nearly or quite as broad as long and often quadrate. None of the leaf cells are porose (rarely a very few near the base).

Another species with curved capsules is the pale Dicranum (*D. pallidum*, *D. spurium condensatum* of L. & J. Manual). This is found on sandy plains in New Jersey and the neighboring territory, but is probably not found elsewhere within the range mentioned above. It is distinguished from all the above mentioned species by its small size (less than one inch in height); from the broom moss by its short irregular upper leaf cells with cell walls without pores, excepting a very few in the lower part; from the fuscous Dicranum by the more compact tufts, and leaves equally spreading, not secund, and little crisped.

There are two common species with erect straight capsules. Of these two, the flagellate Dicranum (*D. flagellare*) is much the more common. It is found in moist woods nearly everywhere. It grows on *decayed logs and stumps*, and often produces abundant flagellæ from the upper part of the plant. These flagellæ bear minute ecostate leaves very different from those on the main plant. In this species the costa does not extend to the apex of the leaf.

The other erect capsuled Dicranum, the fulvous Dicranum (*D. fulvum*) grows on *rocks* and has the costa excurrent—that is, extending beyond the lamina of the leaf into a thick point. In our next number we plan to publish an entirely new key to the whole twenty species. This key will be especially adapted to the use of beginners. We also hope to have some of the rarer species to distribute.

---

#### MICROSCOPIC PREPARATIONS OF MOSSES.

---

PORTIONS of the types of Hedwig's species, many of which are North American, and all of which date back to the beginning of this century, are preserved at the Boissier Herbarium in Geneva, mounted on small mica slides. The medium is a very durable one, for all the slides which I have examined have kept perfectly, and it seems to have been easily handled, for the specimens are not shrivelled or broken. I have since adopted this method for keeping all dissections that I make of the mosses,